

# 4-CH 960H Video Decoders and Audio Codecs

## TW2960

### Features

#### Video Decoder

- NTSC (M, 4.43) and PAL (B, D, G, H, I, M, N, N combination), PAL (60) support with automatic format detection
- Software selectable analog inputs allows any of 2 CVBS per one video ADC
- Built-in analog anti-alias filter
- Four 10-bit ADCs and analog clamping circuit for CVBS input
- Fully programmable static gain or automatic gain control for the Y channel
- Programmable white peak control for CVBS channel
- 4-H adaptive comb filter Y/C separation
- PAL delay line for color phase error correction
- Image enhancement with peaking and CTI
- Digital sub-carrier PLL for accurate color decoding
- Digital Horizontal PLL for synchronization processing and pixel sampling
- Advanced synchronization processing and sync detection for handling non-standard and weak signal
- Programmable hue, brightness, saturation, contrast, sharpness
- Automatic color control and color killer
- Chroma IF compensation
- ITU-R 656 like YCbCr(4:2:2) output or time multiplexed output with 72/144MHz

#### Audio Codecs

- Integrated five audio ADCs processing and one audio DAC
- Provides multi-channel audio mixed analog output
- Support I2S/DSP Master/Slave interface for record output and playback input
- PCM 8/16-bit and u-Law/A-Law 8-bit for audio word length
- Programmable audio sample rate that covers popular frequencies of 8/16/32/44.1/48kHz

#### Miscellaneous

- Two-wire MPU serial bus interface
- Integrated clock PLL for 144MHz clock output
- Power save and Power down mode
- Low power consumption
- Single 36MHz crystal for all standards
- 3.3V tolerant I/O
- 1.8V/3.3V power supply
- 100-pin LQFP package

# Function Description

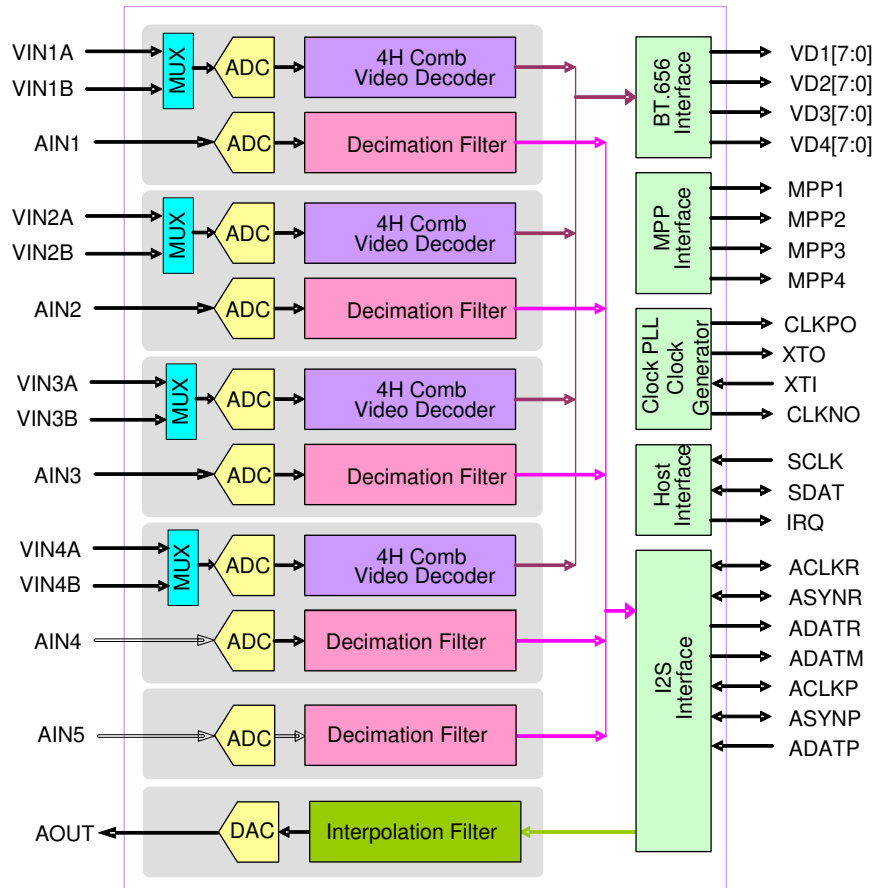


FIGURE 1. TW2960 BLOCK DIAGRAM

For additional products, see [www.intersil.com/product\\_tree](http://www.intersil.com/product_tree)  
 Intersil products are manufactured, assembled and tested utilizing ISO9000 quality systems as noted  
 in the quality certifications found at [www.intersil.com/design/quality](http://www.intersil.com/design/quality)

*Intersil products are sold by description only. Intersil Corporation reserves the right to make changes in circuit design, software and/or specifications at any time without notice. Accordingly, the reader is cautioned to verify that data sheets are current before placing orders. Information furnished by Intersil is believed to be accurate and reliable. However, no responsibility is assumed by Intersil or its subsidiaries for its use; nor for any infringements of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Intersil or its subsidiaries.*